



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30303

Report Nos.: 50-269/84-09, 50-270/84-09, and 50-287/84-10

Licensee: Duke Power Company
 422 South Church Street
 Charlotte, NC 28242

Docket Nos.: 50-269, 50-270, and 50-287

License Nos.: DPR-38, DPR-47, and DPR-55

Facility Name: Oconee 1, 2, and 3

Inspection Dates: April 24-27, 1984

Inspection at Oconee site near Seneca, South Carolina

Inspector: *N. Economos* 5/23/84
 N. Economos Date Signed

Approved by: *J. J. Blake* 5/23/84
 J. J. Blake, Section Chief Date Signed
 Engineering Branch
 Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 31 inspector-hours in the areas of Unit 3 RC pump 3A1 motor stand repair, ISI procedure review, ISI work observation, ISI review and evaluation of records, core barrel bolts inspection, and HPI thermal sleeve examination.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

*M. S. Tuckman, Station Manager
R. J. Brackett, Senior QA Engineer
R. H. Ledford, Technical Support Supervisor
W. R. Hunt, ISI Coordinator
T. K. Royal, Assistant Maintenance Engineer
J. M. Davis, Superintendent of Maintenance
T. C. Mathews, Compliance

Other licensee employees contacted included construction craftsmen, technicians, and office personnel.

Other Organization

Babcock and Wilcox - Utility Power Generation Division

H. W. Stoppelmann, ISI Coordinator Level II Examiner
J. Walden, Level II NDE Examiner
H. Newton, Level II NDE Examiner

NRC Resident Inspector

*J. C. Bryant, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 27, 1994, with those persons indicated in paragraph 1 above. The licensee acknowledged the findings and took no exceptions.

3. Licensee Action on Previous Inspection Findings

Not Inspected.

4. Independent Inspection Effort (92706)

Inspection and Repair of 3A1 Reactor Coolant Pump Motor Stand (Unit 3). Corrective action was taken during this outage to repair the RC pump 3A1 motor stand flange which had sustained some localized damage on the flange surface from apparent erosion corrosion type attack. The damage resulted from boric acid seepage through an improperly seated metal seal. Maximum depth of the affected area after grinding for welding was about 5/8 inches. The controlling documents were Work Request # 51918C and Maintenance Procedure # MP/2&3/A/1310/3C with reference to Bingham RCP Instruction Manual OM 2201-1134. The procedure provided step-by-step instructions for

inspection of the affected area, preparation/excavation, weld repair, refacing, and NDE. QC inspection hold points were provided as appropriate. At the time of this inspection, the repair work had been completed and the pump was being reassembled. The inspector reviewed the repair package including applicable field weld data sheet L-343 Rev. 2, welder qualifications, filler metal certifications, and NDE reports. The inspector noted that two nonconformances were issued by QA; NCI-1031 for lack of preheat as required by the weld procedure, and NCI-1033 for neglecting to perform surface NDE on the weld repair. The inspector discussed these items with engineering staff and with management in order to ascertain how these nonconformances occurred, how they were corrected and what steps were being taken to prevent their recurrence. Management assured the inspector that these nonconformances were not a case of craft bypassing procedural requirements out of carelessness or expediency, but rather a case of field supervision misinterpreting engineering's instructions on the matter of preheat and a misunderstanding between maintenance and QC/NDE departments on the weld repair examination status. The licensee's representative stated that the preheat issue was discussed with Bingham-Willamette and subsequently performed a UT examination around the repaired section to check for weld integrity. The inspector requested and the licensee provided material certification for the repaired flange material. The review showed the material was made of ASTM A 105 Gr. 2, low carbon (.30), 1030 material normalized to a yield strength of 44,500 psi. On the basis of this information, the inspector stated that although no safety issue was involved, he was concerned over the administrative control or lack thereof, that would permit this problem to arise. An inspector followup item was generated to review the corrective measures to be taken on the aforementioned NCIs. Inspector Followup Item 287/84-10-01, Corrective Measures on NCIs 1031 and 1033.

5. Inservice Inspection - Review of Procedures (Unit 3)

The inspector reviewed the ISI procedures indicated below to determine whether the procedures were consistent with regulatory requirements and licensee commitments. Based on the licensee's Technical Specification and 10 CFR 50.55a, the applicable code for ISI is the ASME Code, Section XI, 1974 Edition, Summer 1975 Addenda.

- a. The following procedures were reviewed in the areas of procedure approval, requirements for qualification of NDE personnel, and compilation of required records.

ISI-104, Rev. 20	UT Examination of Ligaments Between Threaded Holes and of Studs and Bolts One Inch and Larger in Diameter
ISI-120, Rev. 18	UT Examination of Piping and Vessel Welds Joining Similar and Dissimilar Materials, Class I Pipe Branch Connections ASME Section XI (77S78)

ISI-130, Rev. 18	UT Examination of Vessel Welds and Nozzle Inside Radius Section Article 4 ASME Section V (77S78) and T-441.9.1, R.G. 1.150
ISI-270, Rev. 13	Wet or Dry Methods of Magnetic Particle Examinations of Welds, Studs, Bolts, and Pump Motor Flywheels - ASME Section III 74, ASME SECTION V (Articles 7 and 25), and R.G. 1.14, Class I Pipe Welds XI (77S78)
ISI-350, Rev. 16	Visual Examination of Welds and Surface Conditions
ISI-353, Rev. 5	Visual Examination of Pipe Hangers, Supports, and Restraints, ASME Section XI (80W80), (VT-3 and VT-4)
ISI-354, Rev. 2	Remote Visual Examination of Welds and Surface Conditions

- b. In addition to the review above, UT procedure ISI-120 was reviewed in the area of procedure content relative to: type of apparatus, extent of coverage including beam angles and scanning techniques, calibration requirements, search units, DAC curves, transfer requirements, reference level for monitoring discontinuities, method of demonstrating penetration, levels for evaluating and recording indications, and acceptance standards.
- c. MT procedure ISI-270 was reviewed for technical content relative to: examination method, use of color contrast particles, surface preparation, surface temperature, particle suspension, viewing conditions, examination directions and overlap, pole or prod spacing, prod magnetizing current, technique for coil method and acceptance criteria.

No violations or deviations were identified.

6. Inservice Inspection - Observation of Work Activities (Unit 3)

The inspector observed the ISI activities described below to determine whether these activities were being performed in accordance with regulatory requirements and licensee procedures. See paragraph 5 above for the applicable code.

- a. Personnel qualification records for two Level II examiners were reviewed.
- b. The inspector observed the in-process UT inspection of welds B4.4.135 and B4.09.015 on ISO-18 system 53A. The inspection was compared with applicable procedures in the following areas:
- (1) Availability of and compliance with approved NDE procedures
 - (2) Use of knowledgeable NDE personnel

- (3) Use of NDE personnel qualified to the proper level
- (4) Recording of inspection results
- (5) Type of apparatus used
- (6) Extent of coverage of volume
- (7) Calibration requirements
- (8) Search units
- (9) Beam angles
- (10) DAC curves
- (11) Reference level for monitoring discontinuities
- (12) Method for demonstrating penetration
- (13) Limits for evaluating and recording indications
- (14) Recording significant indications
- (15) Acceptance limits

7. Inservice Inspection - Data Review and Evaluation (73755B) (Unit 3)

The inspector reviewed the ISI NDE records described below for the Summer 1984 outage. The applicable code for this ISI is the ASME Boiler and Pressure Vessel Code, Section XI, 1974 Edition with Addenda through S1975.

- a. Records for the examination areas listed below were reviewed to ascertain whether the records contained or provided reference to: examination results and data sheets; equipment data; calibration data sheets; evaluation data; records on extent of examination; records relative to deviation from program; disposition of findings; re-examination after repair; and identification of NDE materials.

Examination Areas

- (1) Radiographs for Reactor Coolant Pump 3RCR-3A1
- (2) Letdown Cooler Line "B"

B4.05.157	3-51A-142-17	2½" Diameter
B4.05.15	3-51A-142-19	3" Diameter
B4.05.170	3-51A-143-20	3" Diameter
B4.05.145	3-51A-141-03	3" Diameter
- (3) Reactor Building Spray

C2-01-561	3-54B-08-31	8" Diameter
C2-01-563	3-54B-08-36A	8" Diameter
- (4) Once Through Steam Generator "B" - Upper Head to Tubesheet locations 28-10

B3.01.004	3SGB-WG58-1	8" Thickness
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This weld was examined during the 1982 outage at which time 48 indications were identified and the evaluations were documented in report ER # 82-005, file 0443-A 065. The Office of Nuclear Reactor Regulation (NRR) under Task Interface Agreement (TIA) No. 82-54 dated September 11, 1982, reviewed the information on this matter provided to them by the licensee, and concluded that the component qualifies as "conditionally acceptable" for

continued service under provisions of ASME Section XI IWB-2420. This provision requires the area(s) with the flaw to be reexamined over the next three inspection periods. During the 1984 outage an examination of the same weld volume confirmed the 1982 results. In addition, B&W's evaluation ER # 84-001 indicates that three flaws are slightly smaller, 11 are slightly larger, without impacting the final 1982 evaluated flaw size since they were combined with other flaws whose major dimensions bounded those reported for each individual flaw. Three new indications were recorded and evaluated during this outage. However, because their dimensions were bounded by the 1982 combined flaw evaluation, no additional evaluation was required. Because this matter will require review and evaluation by appropriate NRC staff, it has been identified as Inspector Followup Item 287/84-10-02, Evaluation of Upper Head and Tubesheet Weld 3SGB-WG58-1, UT Indications.

(5) Core Barrel Bolts

UT records indicate that two of the 120 upper core barrel bolts examined were cracked. Twelve bolts were UT examined in the lower core barrel and no cracks were identified.

(6) Alternate NDE Examinations

By letter to H. R. Denton dated October 4, 1982, the licensee requested and received relief from ISI (hydrostatic) requirements. The request included piping between valves HP-62 and HP-63. The inspector observed the alternate UT examination of welds B4.4.135 and B4.09.15 discussed in paragraph 6.b above, the construction radiographs, and UT data from welds E4.01-008 and E4.01-009 were also reviewed.

In addition, PT/MT data was reviewed for the following welds:

<u>PT</u>	<u>MT</u>
E4.01.005	E4.01.032
E4.01.010	E4.01.034
E4.01.015	E4.01.041
E4.01.021	E4.01.042
E4.01.027	
E4.01.031	

No deviations or violations were identified.

8. High Pressure Injection/Makeup Line Thermal Sleeve Inspection (Unit 3)

The thermal sleeves in the high pressure (HPI)/makeup lines were radiographed during this outage as part of an augmented ISI program to monitor thermal sleeve position and restraining weld integrity. Radiographs of thermal sleeves reviewed at this time were:

<u>Item</u>	<u>Thermal Sleeve Designation</u>	<u>Condition</u>
E5.01.014	3A1	Acceptable
E5.01.016	3A2	Acceptable
E5.01.018	3B1	Acceptable
E5.01.020	3B2	Acceptable

No violations or deviations were identified.

9. Eddy Current Examination of Once Through Steam Generator (OTSG) Tubes - Record Review (Unit 3)

ISI activities during this refueling outage included eddy examination of tubes in "A" and "B" OTSGs. Data acquisition and analysis was performed by B&W personnel in accordance with ISI-416, Revision 8, which references R.G. 1.83, Rev. 1. At the time of the inspection, the E/C examination was complete. However, discussions with cognizant licensee personnel disclosed that a total of 2880 tubes were examined in "A" and 3800 tubes in "B". Following is a list of tubes with indications that exceeded code allowable, e.g., 40% of wall thickness.

	<u>Tube No.</u>	<u>Location</u>	<u>% Degradation</u>
<u>OTSG "A"</u>	93-2	14th Support	48
	84-129	11th Support	61
	2-10	12th Support	84
<u>OTSG "B"</u>	8-6	12th Support	43
	8-6	14th Support	43
	13-2	14th Support	44
	75-10	15th Support	42
	75-11	15th Support	54
	124-93	15th Support	96

The licensee indicated that these are preliminary results undergoing review and evaluation. The official results will be included in the report on ISI activities during this outage which will be submitted to Region II at a later date.

No deviations or violations were identified.